

PATENT ABSTRACTS OF JAPAN

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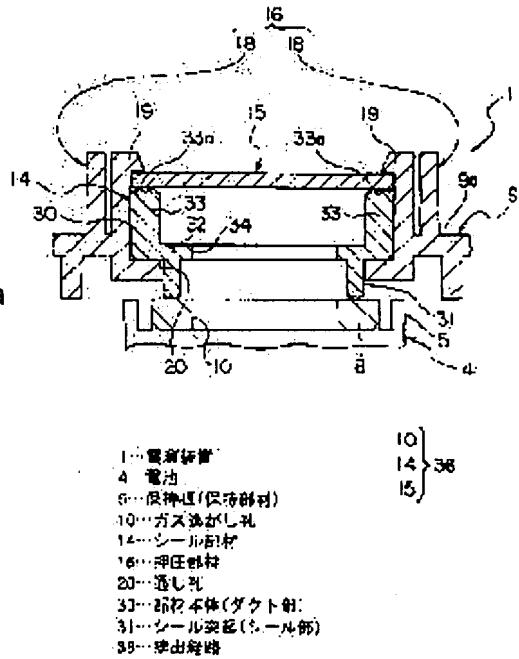
(54) POWER SUPPLY

(57) Abstract:

PROBLEM TO BE SOLVED: To provide a power supply which can suppress runup of costs.

SOLUTION: This power supply 1 has a battery assembly and a battery holding part. The battery assembly has a plurality of batteries 4. A battery 4 has a gas release hole 10 penetrating an outer wall 8. The battery holding part has a holding plate 9, a seal member 14 and a pressurizing member 15. The holding plate 9 has a through-hole 20 overlapping with the gas release hole 10. The seal member 14 is mounted on the holding plate 9. The seal member 14 monolithically has a body 30 of the member and a seal projection 31. The body 30 of the member has a hole 34 overlapping with the through-hole 20. The seal projection 31 is annularly formed and surrounds the hole 34.

The seal projection 31 penetrates into the through-hole 20. The pressurizing member 15 pushes the seal member 14 toward the holding plate 9 and is mounted on the holding plate 9. The seal projection 31 hermetically contacts with the outer edge of the gas release hole 10.



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は、表面9aに対し直交する方向に沿って、押圧部材15を保持板9に近づけて、保持板9とシール部材14と押圧部材15とを固定している。しかしながら、本発明では、押圧部材15を表面9aに沿ってスライドさせて、保持板9とシール部材14と押圧部材15とを固定しても良い。

【0051】

【発明の効果】以上説明したように請求項1に記載の本発明は、シール部材に、ダクト部とシール部とが一体に形成されている。ダクト部にシール部を一つずつ取り付けることなく、シール部材を保持部材に取り付けて、該保持部材に電池集合体を取り付けると、電池のガス逃がし孔からダクト部に亘って気密に保つことができる。このように、容易に組み立てることが可能となり、組立にかかる手間や工数を抑制できる。したがって、電源装置のコストの高騰を抑制できる。

【0052】請求項2に記載の本発明は、通し孔にシール部を通すことができるので、シール部材を保持部材に取り付けて、該保持部材に電池集合体を取り付けると、電池のガス逃がし孔から前記ダクト部に亘ってより確実に気密に保つことができる。このように、容易に組み立てることが可能となり、組立にかかる手間や工数を抑制できる。したがって、電源装置のコストの高騰を抑制できる。

【0053】請求項3に記載の本発明は、押圧部材が保持部材に取り付けられると、シール部材を電池集合体に向かって押す。このため、シール部とガス逃がし孔の外縁部とがより確実に気密状態で接触する。このため、容易に組み立てることが可能となり、組立にかかる手間や工数を抑制でき、電源装置のコストの高騰を抑制できる。ことにくわえ、電池から発生するガスの排出経路を確実に気密に保つことができる。

【0054】請求項4に記載の本発明は、押圧部材とシール部材を保持部材に取り付けることによって、シール部材のダクト部と押圧部材の内側を気密に保つことがで

きる。このように、容易に組み立てることが可能となり、組立にかかる手間や工数を抑制できる。したがって、電源装置のコストの高騰を抑制できる。

【図面の簡単な説明】

【図1】本発明の第1の実施形態にかかる電源装置を分解して示す斜視図である。

【図2】図1に示された電源装置の保持板とシール部材と押圧部材とを示す斜視図である。

【図3】図2に示された保持板とシール部材と押圧部材とを互いに組み付けた状態を示す斜視図である。

【図4】図2に示された電源装置の保持板とシール部材と押圧部材とを裏側からみた斜視図である。

【図5】図4に示された保持板とシール部材と押圧部材とを互いに組み付けた状態を示す斜視図である。

【図6】図3中のVI-VI線に沿った断面図である。

【図7】本発明の第2の実施形態にかかる電源装置のシール部材と押圧部材とを示す斜視図である。

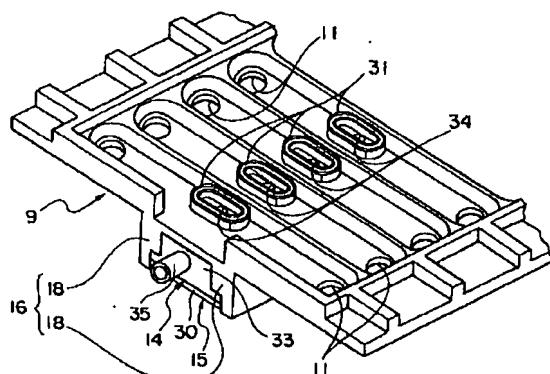
【図8】本発明の第2の実施形態にかかる電源装置の要部の断面図である。

【図9】従来の電源装置の保持部材を裏側からみた斜視図である。

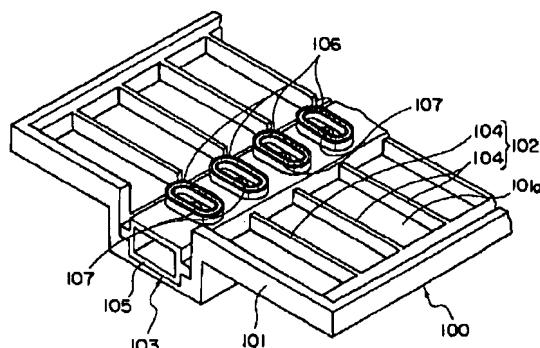
【符号の説明】

- 1 電源装置
- 2 電池集合体
- 4 電池
- 6 正極（正の電極）
- 7 負極（負の電極）
- 9 保持板（保持部材）
- 10 ガス逃がし孔
- 14 シール部材
- 15 押圧部材
- 20 通し孔
- 30 部材本体（ダクト部）
- 31 シール突起（シール部）
- 36 排出経路

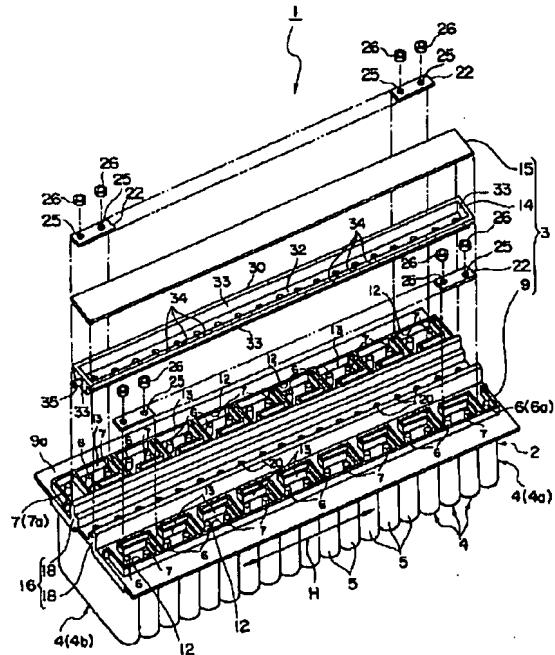
【図5】



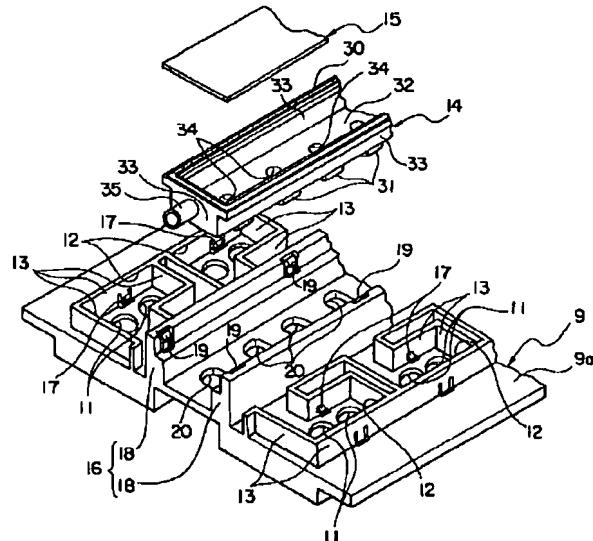
【図9】



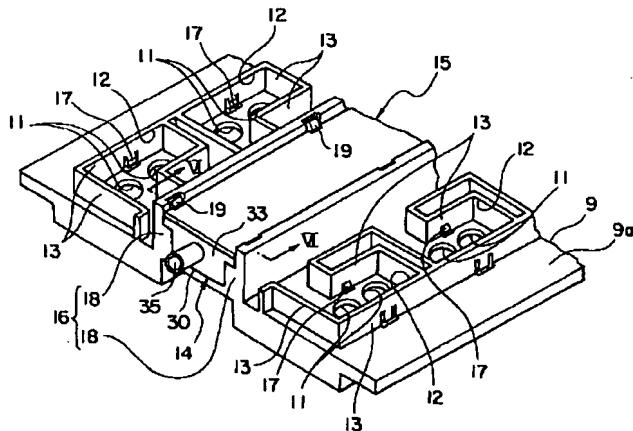
【図1】



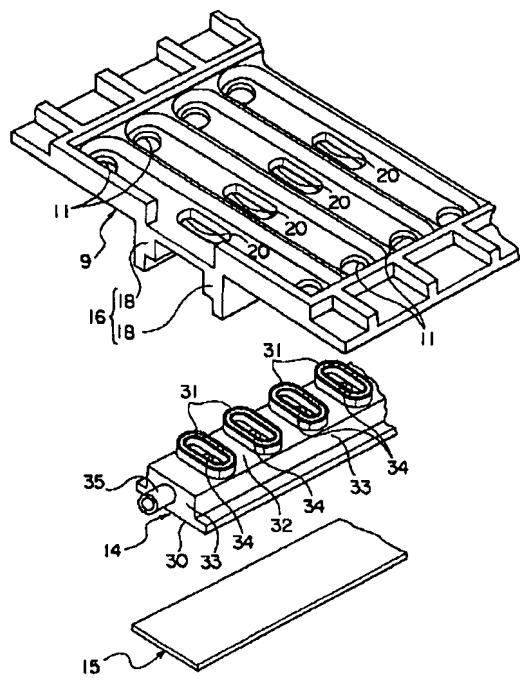
【図2】



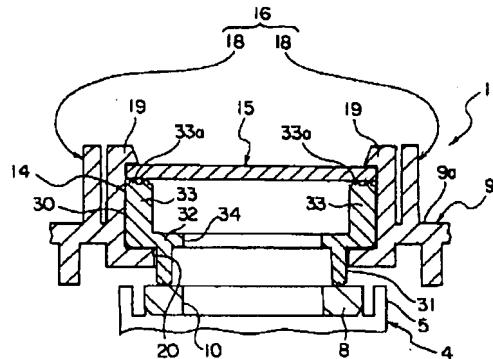
【図3】



【図4】

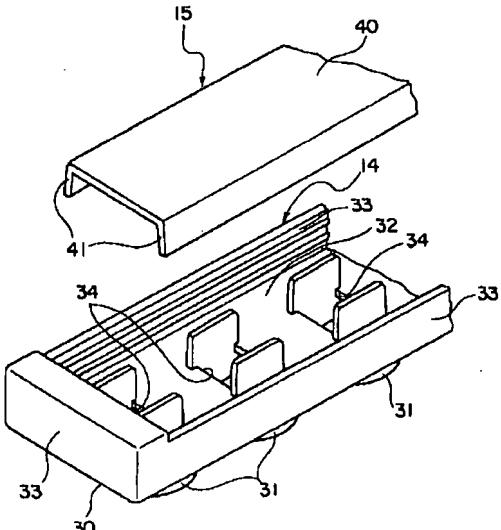


【図6】

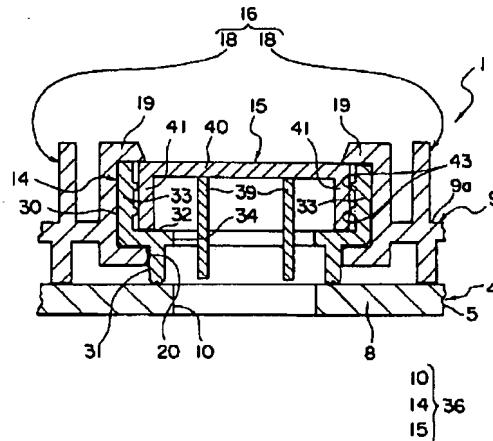


- 1…電源装置
- 4…電池
- 9…保持板(保持部材)
- 10…ガス逃がし孔
- 14…シール部材
- 15…押圧部材
- 20…通し孔
- 30…部材本体(ダクト部)
- 31…シール突起(シール部)
- 36…排出経路

【図7】



【図8】



フロントページの続き

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CC06 CC08 DD00 EE01
5H040 AA03 AA33 AS07 AT06 AY03
CC01 CC12 CC42 DD05 FF01
FF02

* NOTICES *

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damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] Two or more cells are connected to a serial, and this invention is obtained, and relates to the power unit carried in both high Brit vehicles it can run under power, electric vehicles, etc. of an internal combustion engine and a motor.

[0002]

[Description of the Prior Art] A power unit is carried in both high Brit vehicles and electric vehicles of an internal combustion engine and a motor it can run under power. The power unit is equipped with two or more cells and an attachment component 100 (shown in drawing 9).

[0003] The cell prepared the forward electrode (it is called a positive electrode below) in the end, respectively, and has prepared the negative electrode (it is called a negative electrode below) in the other end. Moreover, the gas outlet port for discharging outside the gas which occurs at the time of charge and discharge is established in the cell. The cell is piled up in the condition that said positive electrode and negative electrode adjoin each other mutually.

[0004] The attachment component 100 is formed in tabular and put on said cell. If an attachment component 100 is put on said cell, it will face said gas outlet port. The attachment component 100 is equipped with the member body 101, the tabular cell hold section 102, and the tabular gas discharge section 103 as shown in drawing 9 . The cell hold section 102 is equipped with two or more walls 104 of a convex from surface 101a which faces the cell of said member body 101. The cell hold section 102 holds the edge of each cell between the walls 104 which adjoin each other mutually.

[0005] The gas discharge section 103 is equipped with the duct member 105 and two or more seal members 106. The duct member 105 is formed in tubed. The duct member 105 is in the condition to which the longitudinal direction met in the direction in which said cell was put in order, and is attached in surface 101a of said member body 101. Two or more gas through holes 107 corresponding to the gas outlet port of each cell are formed in the duct member 105. The gas through hole 107 faces the gas outlet port which corresponds, respectively.

[0006] The seal member 106 consists of synthetic resin in which elastic deformation, such as rubber, is free, respectively, and is formed in cyclic. The seal member 106 is attached in the rim section of the gas through hole 107. The seal member 106 is the appearance which held the gas through hole 107, the appearance, i.e., the inside, surrounding the gas through hole 107, and is attached in surface 101a of the member body 101. The seal member 106 will contact the rim section of said gas outlet port, if each cell is attached in an attachment component 100. The seal member 106 keeps airtight the inside of a gas outlet port and the gas through hole 107.

[0007] After the power unit of a configuration of having mentioned above attaches the duct member 105 in an attachment component 100 and attaches the seal member 106 in this duct member 105, it holds each cell in the cell hold section 102 of an attachment component 100. Then, the seal member 106 contacts the rim section of a gas outlet port. And the gas which occurs from each cell at the time of charge and discharge does not leak from between a cell and the seal members 106 etc. by the seal member 106 etc. And said gas passes along the inside of said gas outlet port and inside of the seal member 106, the gas through hole 107, and the duct member 105 etc., and is discharged by the exterior of a power unit.

[0008]

[Problem(s) to be Solved by the Invention] When assembling the power unit of a configuration of having mentioned above, said every one seal member 106 needed to be attached in said duct member 105. For this reason, the time and effort and the man day concerning assembly increased, and there was a possibility of causing the jump of the cost of a power unit.

[0009] Therefore, the purpose of this invention is to offer the power unit which can control the jump of cost.

[0010]

[Means for Solving the Problem] In order to solve a technical problem and to attain the purpose, the power unit of this invention according to claim 1 In the power unit which equipped the end with the discharge path which discharges the cell aggregate equipped with two or more cells which prepared the negative electrode, the attachment component attached in said cell aggregate, and the gas which occurs from each cell at the time of charge and discharge to a forward electrode and the other end The duct section which said cell is equipped with the gas outlet port for discharging said gas outside, respectively, and is attached in said attachment component, The cyclic seal section prepared corresponding to each gas outlet port of each cell, If it has the seal member with which one was equipped, and this seal member is attached in said attachment component and an attachment component is attached in said cell aggregate It is characterized by contacting the rim section of the gas outlet port of the cell by which said seal section corresponds, and keeping airtight the inside of a gas outlet port, said seal section, and said duct section.

[0011] The power unit of this invention according to claim 2 is set to a power unit according to claim 1. Said attachment component Have two or more through holes which are prepared corresponding to said each of seal section, and can let said seal section pass inside, and it lets the seal section pass to said through hole. If the attachment component in which said seal member was attached in said attachment component, and the seal member was attached is attached in the cell aggregate, it is characterized by each seal section contacting the rim section of said gas outlet port.

[0012] In the power unit according to claim 1 or 2, if the power unit of this invention according to claim 3 is attached in said attachment component while being able to detach and attach it freely to said attachment component, it is characterized by having the press member which pushes said seal member toward said cell aggregate.

[0013] In the power unit according to claim 3, if the power unit of this invention according to claim 4 is attached in said attachment component, it is characterized by for the duct section of said seal member and said press member contacting, and keeping airtight the inside of these seal members and said press members.

[0014] According to this invention indicated by claim 1, the duct section and the seal section are formed in the seal member at one. If a seal member is attached in an attachment component and the cell aggregate is attached in this attachment component, without attaching every one seal section in the duct section, from the gas outlet port of a cell, the duct section can be covered and it can be kept airtight.

[0015] Since it can let the seal section pass to a through hole, if according to this invention indicated by claim 2 a seal member is attached in an attachment component and the cell aggregate is attached in this attachment component, from the gas outlet port of a cell, said duct section can be covered and it can be more certainly kept airtight.

[0016] According to this invention indicated by claim 3, if a press member is attached in an attachment component, a seal member will be pushed toward the cell aggregate. For this reason, the seal section of a seal member and the rim section of a gas outlet port contact in the airtight condition more certainly.

[0017] According to this invention indicated by claim 4, the duct section of a seal member and the inside of a press member are kept airtight by attaching a press member and a seal member in an attachment component.

[0018]

[Embodiment of the Invention] The power unit concerning the 1st operation gestalt of this invention is explained with reference to drawing 1 thru/or drawing 6 . The power unit 1 shown in drawing 1 concerning the 1st operation gestalt is carried in the hybrid car it can run with the driving force of the both sides of an internal combustion engine and a motor, and the electric vehicle it can run with the driving force of a motor.

[0019] The power unit 1 is equipped with the cell aggregate 2 and the cell attaching part 3 as shown in drawing 1 . The cell aggregate 2 is equipped with two or more cells 4. The cell 4 is equipped with the ****-like cell proper 5, the forward electrode (it is called a positive electrode below) 6, and the negative electrode (it is called a negative electrode below) 7.

[0020] The positive electrode 6 is formed in the end of a cell proper 5. The negative electrode 7 is formed in the other end of a cell proper 5. The positive electrode 6 and the negative electrode 7 are formed in the shape of a rod, and are projected in this direction from one outer wall (shown in drawing 6 etc.) 8 of said cell proper 5. The thread groove is formed in the peripheral face while a positive electrode 6 and a negative electrode 7 are in parallel (parallel) mutually.

[0021] Two or more cells 4 are in the condition that a positive electrode 6 and a negative electrode 7 adjoin each other mutually, and said outer wall 8 is mutually located on the same flat surface, and are put in order along the one direction (the arrow head H in drawing 1). As for cell 4 comrades which adjoin each other mutually, the positive electrode 6 and the negative electrode 7 adjoin each other mutually. That is, two or more

cells 4 are piled up in the condition that a positive electrode 6 and a negative electrode 7 serve as reverse sense by turns. In addition, the arrow head H is making the direction which said cell 4 piles up.

[0022] Moreover, the gas outlet port 10 (shown in drawing 6) which penetrated the outer wall 8 is established in each cell 4. The gas outlet port 10 is formed in the center of said positive electrode 6 and negative electrode 7. The gas outlet port 10 is for discharging the gas which occurs from each cell 4 at the time of charge and discharge (it is called below the time of charge and discharge) out of this cell 4. If the gas outlet port 10 is piled up as said cell 4 mentioned above, it will be located in a line along with said arrow head H.

[0023] The cell attaching part 3 is equipped with the maintenance plate 9, the bus bar 22, the seal member 14, and the press member 15 as an attachment component. The maintenance plate 9 consists of insulating synthetic resin, and the flat-surface configuration is formed in rectangle-like tabular. The electrode through hole 11 (shown in drawing 2 thru/or drawing 5) which can let the positive electrode 6 and negative electrode 7 of each cell 4 put in order as mentioned above pass, the bus bar hold room 12 (shown in drawing 2, drawing 3, etc.), and the seal fixed part 16 (shown in drawing 2, drawing 3, etc.) and ** are formed in the maintenance plate 9.

[0024] The maintenance plate 9 lets a positive electrode 6 and a negative electrode 7 pass in said electrode through hole 11, and puts them on the outer wall 8 of the cell 4 which constitutes said cell aggregate 2. In this way, the maintenance plate 9 is attached in the cell aggregate 2. At this time, the longitudinal direction of the maintenance plate 9 becomes parallel to an arrow head H. When the bus bar hold room 12 is put on said outer wall 8, they are established in surface 9a exposed to the outside of the maintenance plate 9. [two or more] The bus bar hold room 12 is formed by two or more septa 13 set up from said surface 9a, as shown in drawing 2, drawing 3, etc. The electrode through hole 11 which lets one positive electrode 6 pass, and the electrode through hole 11 which lets one negative electrode 7 pass are carrying out opening to the bus bar hold room 12. That is, it lets the electrode through hole 11 pass in the bus bar hold room 12, and the positive electrode 6 and negative electrode 7 of a cell 4 which adjoin each other mutually trespass upon it.

[0025] A bus-bar hold room 12 is allotted to the location except the location which laps with the positive electrode 6 (sign 6a shows below) of one cell 4 (sign 4a shows below) located in an end among two or more cells 4 put in order along said one direction H, and the location which lap with the negative electrode 7 (sign 7a shows below) of other cells 4 (sign 4b shows below) located in the other end.

[0026] Moreover, as shown in drawing 2 and drawing 3, two or more stop pawls 17 for fixing said bus bar 22 are formed in each bus bar hold room 12. The stop pawl 17 is projected toward the inside of the bus bar hold room 12 from the inside of a septum 13. The stop pawl 17 stops to the rim of a bus bar 22, and fixes this bus bar 22 in the bus bar hold room 12.

[0027] The seal fixed part 16 is surface 9a of the maintenance plate 9, and is prepared in the center of the cross direction of said maintenance plate 9. The seal fixed part 16 is equipped with the septum 18 of the pair projected from said surface 9a as shown in drawing 1 thru/or drawing 6. The septum 18 is prolonged along with the longitudinal direction of the maintenance plate 9. Along the cross direction of the maintenance plate 9, a septum 18 opens spacing mutually and is arranged. The septum 18 is mutually parallel. The stop pawl 19 is formed in these septa 18, respectively. The stop pawl 19 is projected from the front face of each septum 18 in the direction in which the septum 18 of these pairs approaches mutually. The stop pawl 19 stops to the rim of the press member 15, and fixes the seal member 14, the press member 15, and the maintenance plate 9.

[0028] Moreover, as shown in drawing 2, drawing 4, and drawing 6, two or more through holes 20 are formed in the seal fixed part 16. The through hole 20 is formed between the septa 18 of a pair. The through hole 20 has penetrated the maintenance plate 9. The through hole 20 is located in a line along with the longitudinal direction of the maintenance plate 9. Each through hole 20 will lap with the gas outlet port 10, if the maintenance plate 9 puts on the outer wall 8 of the cell 4 of the cell aggregate 2.

[0029] A bus bar 22 consists of a metal which has conductivity, and is formed in the shape of a strip. The bus bar 22 is equipped with one pair of hole 25 which can let a positive electrode 6 and a negative electrode 7 pass. A bus bar 22 -- the hole 25 of a pair -- it is alike, respectively, it lets a positive electrode 6 and a negative electrode 7 pass, and holds in said bus bar hold room 12. A bus bar 22 is stopped by the stop pawl 17 formed in the inside of a septum 13, and is fixed in the bus bar hold room 12.

[0030] The seal member 14 consists of synthetic resin which has the elasticity of rubber etc. The seal member 14 equips one with the member body 30 as the duct section, and two or more seal projections 31, as shown in drawing 2, drawing 4, drawing 6, etc. A flat-surface configuration is equipped with the rectangle-like bottom plate 32 and two or more peripheral walls 33, and the member body 30 is formed in box-like, as shown in drawing 1, drawing 2, drawing 4, drawing 6, etc. The member body 30 is attached in the maintenance plate 9. the die length of the longitudinal direction of a bottom plate 32 -- the die length of the longitudinal direction of the maintenance plate 9, and abbreviation -- it is equal. the die length of the cross direction of a bottom plate 32 -- spacing between the septa 18 of said pair, and abbreviation -- it is equal.

[0031] As shown in drawing 1, drawing 2, drawing 4, or drawing 6, two or more holes 34 are formed in the bottom plate 32. Of course, the hole 34 has penetrated the bottom plate 32. A hole 34 will lap with said through hole 20, if the seal member 14 is attached in the seal fixed part 16. That is, the gas outlet port 10, the through hole 20, and a hole 34 lap mutually, and are opened for free passage.

[0032] Moreover, the seal projection 31 is equivalent to the seal section described in this specification. The seal projection 31 is set up from the bottom plate 32 to the reverse sense of a peripheral wall 33. As for the seal projection 31, the flat-surface configuration is formed in cyclic. the seal projection 31 -- a hole 34 -- it is alike, respectively, and it corresponds and one is prepared at a time. namely, the seal projection 31 -- the gas outlet port 10 -- it is alike, respectively, and it corresponds and one is prepared at a time. The seal projection 31 is formed in the rim section of said hole 34. The seal projection 31 has surrounded the hole 34.

[0033] Moreover, the seal projection 31 can invade in the through hole 20. If the seal projection 31 invades in the through hole 20, as shown in drawing 6, it will contact the outer wall 8 located in the rim section of the gas outlet port 10. The seal projection 31 maintains between outer walls 8 at an airtight condition. If the seal projection 31 contacts an outer wall 8, it will surround the gas outlet port 10. In this way, it is referred to as that the seal projection 31 contacts the rim section of the gas outlet port 10 on these specifications to contact the outer wall 8 with which the seal projection 31 is located in the rim section of the gas outlet port 10. For this reason, the seal projection 31 contacts the rim section of the gas outlet port 10 in the airtight condition.

[0034] The peripheral wall 33 stands in a row in the rim of a bottom plate 32, and is set up to this bottom plate 32. Furthermore, the pipe 35 is attached in the peripheral wall 33 in which a before [the drawing 1 metacarpus] side is located among two or more peripheral walls 33 of the seal member 14 as shown in drawing 1 thru/or drawing 5. The pipe 35 is opening the inside and the outside of the member body 30 of the seal member 14 for free passage.

[0035] The press member 15 can be freely detached and attached to the maintenance plate 9. As for the press member 15, the flat-surface configuration is formed in rectangle-like tabular. the die length of the longitudinal direction of the press member 15 -- the die length of the longitudinal direction of the maintenance plate 9, and abbreviation -- it is equal. the die length of the cross direction of the press member 15 -- spacing between the septa 18 of said pair, and abbreviation -- it is equal.

[0036] The press member 15 is in the condition that the seal member 14 was inserted between the septa 18 of the pair of said seal fixed part 16, and is inserted between the septa 18 of said pair. Then, the press member 15 pushes the seal member 14 toward the maintenance plate 9 2, i.e., the cell aggregate. Furthermore, the stop pawl 19 mentioned above stops to the rim of the press member 15. Then, between edge 33a (shown in drawing 6) which is separated from the bottom plate 32 of the peripheral wall 33 of the seal member 14, and the press members 15 is maintained at an airtight condition.

[0037] In addition, the discharge path 36 of the gas described in this specification as the gas outlet port 10 mentioned above, the seal member 14, and the press member 15 is constituted. The discharge path 36 is for discharging said gas out of a power unit 1.

[0038] In case the power unit 1 of a configuration of having mentioned above is assembled, two or more cells 4 are first put on the condition that a positive electrode 6 and a negative electrode 7 adjoin each other mutually. And said positive electrode 6 and negative electrode 7 are inserted into the electrode through hole 11, and the maintenance plate 9 is put on the outer wall 8 of a cell 4.

[0039] The bus bar 22 which let the positive electrode 6 which adjoins each other mutually in a hole 25, and the negative electrode 7 pass is inserted into the bus bar hold room 12. A bus bar 22 is made to stop the stop pawl 17, and this bus bar 22 is fixed in the bus bar hold room 12. Then, a nut 26 etc. is thrust into the periphery of each positive electrode 6 and a negative electrode 7, and said cell 4, maintenance plate 9, and bus bar 22 are fixed.

[0040] Then, the seal member 14 is inserted between the septa 18 of a pair through the seal projection 31 into the through hole 20. And the press member 15 is inserted between the septa 18 of a pair. The rim of the press member 15 is made to stop the stop pawl 19. While the seal projection 31 contacts the rim section of the gas outlet port 10 in the airtight condition, the peripheral wall 33 of the member body 30 contacts in the press member 15 and the airtight condition. In this way, the inside of the discharge path 36, i.e., the gas outlet port 10, the seal projection 31, and the member body 30, and the press member 15 is maintained at an airtight condition, and the power unit 1 of a configuration of having mentioned above is assembled.

[0041] In this way, the positive electrode 6 and negative electrode 7 which the assembled power unit 1 adjoins mutually with said bus bar 22 except for positive-electrode 6 of one cell 4a a located in the end of said one direction H and negative-electrode 7a of other cell 4b located in the other end of said one direction H are connected electrically. And the cell 4 of each other is electrically connected to a serial.

[0042] According to this operation gestalt, the seal member 14 forms the member body 30 and the seal

projection 31 in one. If the seal member 14 is attached in the maintenance plate 9 and the cell aggregate 2 is attached in this maintenance plate 9, without attaching every one seal projection 31 in the member body 30, ranging from the gas outlet port 10 to said member body 30 of a cell 4, it can be kept airtight. Thus, it becomes possible to assemble easily and the time and effort and the man day concerning assembly can be controlled. Therefore, the jump of the cost of a power unit 1 can be controlled.

[0043] Moreover, since it can let the seal projection 31 pass to the through hole 20 of the maintenance plate 9, if the seal member 14 is attached in the maintenance plate 9 and the cell aggregate 2 is attached in this maintenance plate 9, ranging from the gas outlet port 10 to said member body 30 of a cell 4, it can be more certainly kept airtight. Therefore, it can assemble more easily and the jump of the cost of a power unit 1 can be controlled.

[0044] Furthermore, if attached in the maintenance plate 9, the press member 15 will push the seal member 14 toward the cell aggregate 2. For this reason, the seal projection 31 and the rim section of the gas outlet port 10 contact in the airtight condition more certainly. For this reason, the discharge path 36 of the gas which occurs from a cell 4 can be certainly kept airtight.

[0045] Moreover, the press member 15 and the seal member 14 constitute the discharge path 36 for discharging the gas which occurs from a cell 4. For this reason, said discharge path 36 can be assembled by attaching the press member 15 and the seal member 14 in the maintenance plate 9. Thus, it can assemble still more easily and the jump of the cost of a power unit 1 can be controlled further.

[0046] Next, the power unit concerning the 2nd operation gestalt of this invention is explained with reference to drawing 7 and drawing 8. In addition, the same sign is given to the same component as the 1st operation gestalt mentioned above, and explanation is omitted to it.

[0047] With this operation gestalt, as shown in drawing 7 and drawing 8, the press member 15 is equipped with the head-lining wall 40 and the side attachment wall 41 of the pair which stands in a row on both the edges of the cross direction of this head-lining wall 40, and is formed in gutter-shaped [of a cross-section KO typeface]. As shown in drawing 8, the press member 15 is in the condition to which the head-lining wall 40 opened a bottom plate 32 and spacing, and it faced, and the side attachment wall 41 was located inside the peripheral wall 33, and is inserted into the seal member 14. And the stop pawl 19 stops to the rim of the head-lining wall 40 of the press member 15, and the seal member 14 and the press member 15 are fixed to it by the maintenance plate 9.

[0048] Also in this operation gestalt, the seal member 14 forms the member body 30 and the seal projection 31 in one like the 1st operation gestalt mentioned above. For this reason, it becomes possible to assemble easily and the time and effort and the man day concerning assembly can be controlled. Therefore, the jump of the cost of a power unit 1 can be controlled. Moreover, it can let the seal projection 31 pass to the through hole 20 of the maintenance plate 9. Therefore, it can assemble more easily and the jump of the cost of a power unit 1 can be controlled.

[0049] Furthermore, if attached in the maintenance plate 9, this press member 15 will push the seal member 14 toward the cell aggregate 2. For this reason, the discharge path 36 of the gas which occurs from a cell 4 can be certainly kept airtight. Moreover, the press member 15 and the seal member 14 constitute the discharge path 36 for discharging the gas from a cell 4. For this reason, said discharge path 36 can be assembled by attaching the press member 15 and the seal member 14 in the maintenance plate 9. Thus, it can assemble still more easily and the jump of the cost of a power unit 1 can be controlled further.

[0050] In addition, with the 1st and 2nd operation gestalten mentioned above, along the direction which intersects perpendicularly to surface 9a, the press member 15 is brought close to the maintenance plate 9, and the maintenance plate 9, the seal member 14, and the press member 15 are fixed. However, in this invention, the press member 15 may be made to slide along with surface 9a, and the maintenance plate 9, the seal member 14, and the press member 15 may be fixed.

[0051] [Effect of the Invention] As explained above, as for this invention according to claim 1, the duct section and the seal section are formed in the seal member at one. If a seal member is attached in an attachment component and the cell aggregate is attached in this attachment component, without attaching every one seal section in the duct section, from the gas outlet port of a cell, the duct section can be covered and it can be kept airtight. Thus, it becomes possible to assemble easily and the time and effort and the man day concerning assembly can be controlled. Therefore, the jump of the cost of a power unit can be controlled.

[0052] Since this invention according to claim 2 can let the seal section pass to a through hole, if it attaches a seal member in an attachment component and the cell aggregate is attached in this attachment component, from the gas outlet port of a cell, it can cover said duct section and can be more certainly kept airtight. Thus, it becomes possible to assemble easily and the time and effort and the man day concerning assembly can be

controlled. Therefore, the jump of the cost of a power unit can be controlled.

[0053] This invention according to claim 3 will push a seal member toward the cell aggregate, if a press member is attached in an attachment component. For this reason, the seal section and the rim section of a gas outlet port contact in the airtight condition more certainly. For this reason, in addition to the ability to become possible to assemble easily, control the time and effort and the man day concerning assembly, and control the jump of the cost of a power unit, the discharge path of the gas which occurs from a cell can be certainly kept airtight.

[0054] This invention according to claim 4 can keep airtight the duct section of a seal member, and the inside of a press member by attaching a press member and a seal member in an attachment component. Thus, it becomes possible to assemble easily and the time and effort and the man day concerning assembly can be controlled. Therefore, the jump of the cost of a power unit can be controlled.

[Translation done.]